ABSTRACT

THESIS: Verifying Monitor Unit Calculations for Tangential Whole-Breast Fields in Three-Dimensional Planning

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Breast conservation radiotherapy makes use of tangential fields and wedges for dose uniformity. An important part of quality assurance is to verify the monitor unit calculations or the time calculated to deliver the required dose to the patient. For breast tangential fields, monitor unit differences between primary calculations and secondary checks are usually larger than would be acceptable at other anatomic sites. A simple model that would reconcile the differences based on estimating a new equivalent field size was analyzed. The model was able to correct the dose predicted by Radcalc which was the simulation program used as the secondary check, to reconcile that with the measured dose obtained from a water phantom, which was our primary calculation. The percentage differences between Radcalc and that of the measured dose were within ±5%.